

**WASHINGTON STATE DEPARTMENT OF ECOLOGY
POST OFFICE BOX 47600
OLYMPIA, WASHINGTON 98504-7600**

IN THE MATTER OF:

**ConocoPhillips Company
Ferndale Refinery
3901 Unick Road, P.O. Box 8
Ferndale, Washington 98248**

**] NO. PSD-05-01
]
] FINAL APPROVAL
] OF PSD APPLICATION
]**

Pursuant to the federal Prevention of Significant Deterioration (PSD) regulations, 40 Code of Federal Regulations (CFR) 52.21, and the Washington State Department of Ecology (Ecology) general regulations for air pollution sources, Chapter 173-400 Washington Administrative Code (WAC), Ecology now finds the following:

FINDINGS

1. The ConocoPhillips Company (ConocoPhillips) has applied to modify its refinery to increase their crude charge, fluidized catalytic cracking (FCC) charge, and sulfur removal capacity near Ferndale, Washington.
2. A PSD application was submitted on January 6, 2005. Supplemental information was received on February 23, 2005, March 29, 2005, May, 18, 2005, June 22, 2005, and August, 5, 2005. On September 23, 2005, the application was found to be sufficiently complete to begin developing permit conditions.
3. ConocoPhillips refinery is located in the city of Ferndale near Whatcom County, Washington. The Ferndale Refinery is situated in Sections 32 and 33, Township 39N, Range 1E, Willamette Meridian.
4. The facility is located in a Class II Area that is designated as "attainment or unclassified" for the purpose of PSD permitting for all pollutants. The distances to the nearest Class I Areas are shown in the following table:

Class I Area	Distance in kilometers
North Cascades National Park	75
Glacier Peak Wilderness Area	100

5. The proposed project, referred to as the Crude/Fluidized Catalytic Cracking/Sulfur Recovery Unit (CFS) project, consists of the following components:
 - Increasing crude charge from 98 thousand barrels per day (MBPD) to 105 MBPD.
 - Increasing FCC charge from 35 MBPD to 36.5 MBPD.

- Increasing primary amine system capacity.
 - Installing a new SRU for reliability and additional sulfur removal capacity.
6. The Ferndale Refinery is one of the 28-listed sources with a 100-ton major stationary source threshold.
 7. The Ferndale Refinery qualifies as a major stationary source because it emits or has the potential to emit greater than 100 tons per year of PM, PM₁₀, SO₂, NO_x, VOC, and CO.
 8. ConocoPhillips has elected to “Net Out” of PSD review for SO₂ and H₂SO₄. A 5-year contemporaneous analysis resulted in the following analysis:

	SO₂ in tons per year	H₂SO₄ in tons per year
Project Emissions	661.02	11.37
Emissions Increases	0.00	0.00
Emission Decreases	(1426.69)	(24.47)
Net Emission Increase	(765.67)	(13.10)
PSD SER	40	7
PSD Triggered	NO	NO

9. The table below compares the project emissions to the PSD Significant Emission Rates (SER).

	PM	PM ₁₀	SO ₂	NO _x	VOC	CO	H ₂ SO ₄
Project Emissions in tons per year	57.52	18.45	(765.67)	463.95	153.08	357.41	(13.10)
PSD Significant Emission Rate (SER)	25	15	40	40	40	100	7
Subject to PSD Y or N	Y	Y	N	Y	Y	Y	N

10. Emission increases of all other pollutants are subject to New Source Review (NSR) by the Northwest Clean Air Agency (NWCAA).
11. The SRU is being physically modified and is therefore subject to Best Available Control Technology (BACT). BACT for the SRU has been selected to be:

Emission Unit	Pollutant	Proposed BACT
New SRU	NO _x	Low-NO _x Burners 42.2 ppmdv @7% O ₂ , 1-hr average
	CO	Good Combustion Practices 57.1 ppmdv

12. ConocoPhillips is subject to the following New Source Performance Standards and NESHAPS requirements:

New Source Performance Standard	40 CFR 60, Subpart A
New Source Performance Standard	40 CFR 60, Subpart J
New Source Performance Standard	40 CFR 60, Subpart GGG
New Source Performance Standard	40 CFR 60, Subpart QQQ
National Emission Standards for Hazardous Air Pollutants	40 CFR 63, Subpart CC
National Emission Standards for Hazardous Air Pollutants	40 CFR 63, Subpart UUU

13. The modeling showed that emissions from the proposed project are below the Class 1 modeling significance levels and Class 1 PSD increment has not been over consumed as shown in the following table:

Pollutant	Averaging Period	Class I Area Modeling Significance Levels ($\mu\text{g}/\text{m}^3$)	Class I PSD Increment ($\mu\text{g}/\text{m}^3$)
PM ₁₀	24-hour	0.3	8
	Annual	0.2	4
NO ₂	Annual	0.1	2.5
CO	1-hour	N/A	N/A
	8-hour	N/A	N/A
Ozone	1-hour	N/A	N/A
	8-hour	N/A	N/A

14. The project will not have a noticeable effect on industrial, commercial, or residential growth in the Ferndale area.
15. Based upon the Technical Support Document prepared on September 23, 2005 and the application, Ecology finds that all requirements for PSD have been satisfied and will comply with all applicable federal NSPS. Approval of the PSD application is granted subject to the following conditions:

APPROVAL CONDITIONS

Emission Limits

1. NO_x emissions from the SRU:
 - a. Emissions shall not exceed 42.2 ppm_{dv} @7% O₂, 1-hr average, measured as provided in Approval Condition 4.
 - b. Emissions shall not exceed 2.3 pounds per hour, measured as provided in Approval Condition 4.
2. CO emissions from the SRU:
 - a. Emissions shall not exceed 57.1 ppm_{dv} @7% O₂, 1-hr average, measured as provided in Approval Condition 5.

- b. Emissions shall not exceed 1.9 pounds per hour, measured as provided in Approval Condition 5.

Compliance Determination Methods

3. Compliance with Approval Condition 1 shall be determined by 40 CFR 60 Appendix A, Method 7E or an equivalent method approved in advance by Ecology.
4. Compliance with Approval Condition 2 shall be determined by 40 CFR 60 Appendix A, Method 10 or an equivalent method approved in advance by Ecology.

Monitoring Methods

5. Compliance with Approval Condition 1 shall be monitored by annual source testing in accordance with Approval Condition 3.
6. Compliance with Approval Condition 2 shall be monitored by annual source testing in accordance with Approval Condition 4.

Other Conditions

7. After incorporation of the approval conditions of this PSD permit into ConocoPhillips' Title V permit (40 CFR Part 70), each occurrence of emissions measured in excess of the limit specified in Approval Conditions 1 and 2 be reported in writing to NWCAA as required by the Title V permit in accordance with WAC 173-401-615(3)(b).
8. Within 90 days of startup, ConocoPhillips shall identify operational parameters and practices that will constitute "proper operational practices" of the operation of the new SRU relative to compliance with the conditions of this permit. These operational parameters and practices shall be included in an O&M manual for the facility. The O&M manual shall be maintained and followed by ConocoPhillips and shall be available for review by Ecology, NWCAA, or EPA. Emissions that result from a failure to follow the requirements of the O&M manual relative to compliance with the conditions of this permit may be considered credible evidence that emission violations have occurred.
9. Access to the source by Ecology, NWCAA, or the EPA, shall be permitted upon request. Failure to allow such access is grounds for an enforcement action under the federal Clean Air Act or the Washington State Clean Air Act.
10. This approval shall become invalid if construction of the project is not commenced within eighteen (18) months after receipt of the final approval, or if construction of the facility is discontinued for a period of eighteen (18) months, unless Ecology extends the 18 month period, pursuant to 40 CFR 52.21(r)(2) and applicable EPA guidance.
11. The effective date of this permit shall not be earlier than the date upon which the US EPA notifies Ecology that the US EPA has satisfied its obligations, if any, under Section 7 of the Endangered Species Act 16 U.S.C. § 1531 et seq., 50 C.F.R. Part 402, subpart B (Consultation Procedures) and Section 305(b)(2) of the Magnuson-Stevens Fishery and

Conservation Act 16 U.S.C. § 1801 et seq., 50 C.F.R. Part 600, subpart K (EFH Coordination, Consultation, and Recommendations).

12. For federal regulatory purposes and in accordance with 40 CFR 124.15 and 124.19: If there was a public comment requesting a change in the preliminary determination or a proposed permit condition during the public review and comment period, the effective date of this permit shall not be earlier than 30 days after service of notice to the commenters and applicant on the preliminary determination.
- a. If a review of the final determination is requested under 40 CFR 124.19 within the 30 day period following the date of the final determination, the effective date of the permit is suspended until such time as the review and any subsequent appeal against the permit are resolved.
 - b. If there was no public comment requesting a change in the preliminary determination or a proposed permit condition during the public review and comment period, this permit is effective upon the date of finalization subject to consideration of Condition 11 (EPA's ESA requirement) above.

Reviewed by:

Richard B. Hibbard, P.E.
Technical Services Section
Air Quality Program

Date

Approved by:

Stuart A. Clark, Program Manager
Air Quality Program
Washington State Department of Ecology

Date

Ecology was notified by the USEPA that the USEPA has satisfied its obligations under the Endangered Species and Magnuson-Stevens Acts relative to PSD Permit 05-01 issued to ConocoPhillips on:

Date of USEPA Notification

Stuart A. Clark, Program Manager
Air Quality Program
Washington State Department of Ecology